

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 8818 WO GI-RIX	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/011030	International filing date (<i>day/month/year</i>) 02.10.2004	Priority date (<i>day/month/year</i>) 30.10.2003
International Patent Classification (IPC) or national classification and IPC F16H63/30, F16D25/10, F16D25/0638, F16D13/72		
Applicant ZF FRIEDRICHSHAFEN AG		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>8</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>10</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/011030

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-25 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-29 received by this Authority on 12.02.2005 with letter of 04.02.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/3-3/3 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 30
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/011030

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1-29</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>1-29</u>	YES
		Claims _____	NO
	Industrial applicability (IA)	Claims <u>1-29</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
1.	<p>The present report makes reference to the following documents:</p> <p>D1: DE 91 14 528 U (ZAHNRADFABRIK FRIEDRICHSHAFEN AG) 13 February 1992 (1992-02-13)</p> <p>D2: US 2003/087720 A1 (LEPELLETIER PIERRE) 8 May 2003 (2003-05-08).</p>		
2.	INDEPENDENT CLAIM 1		
2.1	<p>Document D1 is considered to be the prior art closest to the subject matter of claim 1. Said document discloses (the references in parentheses are to document D1, see figure 1):</p> <p>an actuating arrangement for two friction shift elements (13, 14) in a transmission, said friction shift elements being arranged one immediately behind the other in an axial direction and substantially on the same transmission diameter in a radial direction, being configured as multi-disk clutches and being actuated by a pressure-exerting means (13, 14),</p> <p style="text-align: right;">/...</p>		

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

the inner disks (7) and the outer disks (8) thereof being attached to the disk carrier and a servo device (19, 20; 25, 26) being associated with each thereof, the inner disks (7) of the two friction shift elements (13, 14) being arranged on a common inner disk carrier (2) and the inner disk carrier (2) being in the form of a drum which, seen in cross-section, is open on one side in the axial direction, the two servo devices being disposed in a radial manner at least predominantly within the drum volume formed by the drum-shaped inner disk carrier (2) and being, at least in part, mutually adjacent in an axial direction and positioned, in a radial direction, substantially under disk sets of the two friction shift elements (13, 14), the first friction shift element (14) being close to a drum base of the inner disk carrier (2), wherein the two friction shift elements (13, 14) can be actuated individually and independently of each other by means of the servo devices.

The subject matter of claim 1 therefore differs from the known actuating arrangement in that:

the inner disk carrier that is common to the two friction shift elements has radial perforations peripherally distributed on its outer diameter in the region between the two disk sets in an axial direction.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>The subject matter of claim is therefore novel (PCT Article 33(2)).</p>
2.2	<p>The problem addressed by the present invention can consequently be regarded as that of devising an alternative design for the actuating arrangement.</p>
	<p>The solution to the above problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)). The reasons are as follows:</p>
	<p>although, in document D1, the common inner disk carrier comprises peripheral perforations, they are located not between the two disk sets, as in claim 1, but between the base of the drum and the two disk sets. The prior art contains nothing to indicate the solution as proposed in claim 1.</p>
3.	<p>Claims 2-29 are dependent on claim 1 and, in consequence, likewise satisfy the requirements of the PCT in respect of novelty and inventive step.</p>

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The application fails to meet the requirements of PCT Article 6 because claim 1 lacks clarity.

It appears, from a number of passages of the description as well as from figures 1 and 3, that the characterising feature of claim 1 (peripheral perforations in the inner disk carrier, between the two disk sets in an axial direction) is always mentioned in conjunction with the feature that the fingers of one or both actuating pistons pass through said perforations:

- (see page 4, line 32 to page 5, line 2) "the fingers of the piston of the first servo device, which is close to the base of the drum, pass through the aforementioned perforations in the common inner disk carrier in a radial direction";
- (page 10, lines 28-33) "Moreover, the two pistons on the outer diameter have radial fingers on the outer diameter...which pass through the common inner disk carrier in the respective associated radial perforations".

Similar statements are found in the description of the embodiments:

- see page 15, lines 19-30: "fingers 19...pass through the recesses 23";
- page 20, line 31 to page 21, line 13, "...radially oriented fingers 51, 52 that pass through radial perforations 53".

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Box No. VIII Certain observations on the international application

Nowhere in the description are the perforations (23 in figure 1 and 53 in figure 3) mentioned in conjunction with a function other than that of allowing the fingers of one or two actuating pistons to pass through in a radial direction.

Thus, the function of the radial perforations, namely to allow the radial fingers of the actuating pistons, or of one thereof, to pass through the inner disk carrier, is clearly essential to the invention.

Accordingly, it is the perforations and the function thereof in conjunction with the fingers of the actuating pistons, not the perforations alone, that are essential to the invention.

This is also evident from the fact that, in relation to the second embodiment, there is no disclosure of radial perforations of this type arranged in an axial direction between the two disk sets. (Although perforations are also present in the second embodiment, they are axially arranged on the inner disks of the second disk set. Alternatively, or in addition, axially oriented recesses are provided on the inner disk carrier in the vicinity of the second disk set, which is further away from the base of the drum (see page 7, lines 7-13). Thus, the perforations alone cannot constitute an essential feature of the invention when they could be present in one embodiment of said invention (albeit for a different purpose) despite not being mentioned.

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Box No. VIII Certain observations on the international application

Since independent claim 1 does not define the function of the radial perforations, it fails to meet the requirement of PCT Article 6 in conjunction with PCT Rule 6.3 that each independent claim must contain all those features which are necessary for the definition of the invention.

In conclusion, it should be noted that, for the reasons set out above, the second embodiment does not come under the present claim 1.

Furthermore, a problem arises in respect of claims 6 to 9, which relate to the second embodiment, owing to the reference back to claim 1 (the original claims 1 and 2) and thus to the feature concerning the radial perforations between the disk sets, since said perforations and their function according to the invention are not disclosed in conjunction with the second embodiment.